

Chronic Disease Burden & Disparities in Kansas

Belle Federman, ScD
Advanced Epidemiologist

Ghazala Perveen, MBBS, MPH, PhD
Health Officer /Director of Science & Surveillance
KDHE Bureau of Health Promotion

Community Health Promotion Summit
January 26, 2017



Our Mission: To protect and improve the health and environment of all Kansans.

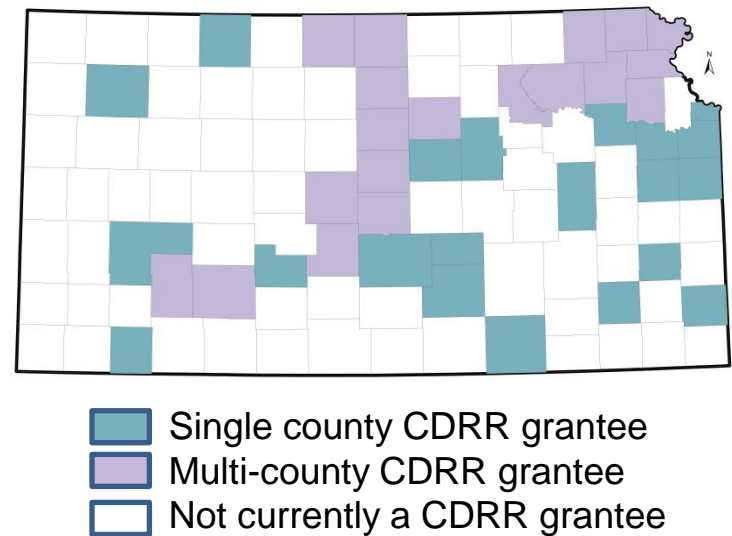
Purpose

Provide a resource/context for understanding the leading preventable causes of death & disability in Kansas and related health disparities

1. Starting at the end: Leading causes of death
2. Burden of chronic disease
3. Ending with prevention: Reducing the preventable burden of chronic disease

Kansas Demographics

- **105=Counties** (shaded counties represent SFY2017 CDRR grantees)
 - 36 Frontier
 - 33 Rural
 - 20 Densely-settled Rural
 - 10 Semi Urban
 - 6 Urban



Source:

United States Census Bureau Quick Facts: Kansas (vintage 2015 <http://www.census.gov/quickfacts/table/PST045215/20> accessed on January 10, 2017)

2015 Kansas Annual Summary of Vital Statistics. Bureau of Epidemiology and Public Health Informatics, KDHE

Kansas Demographics

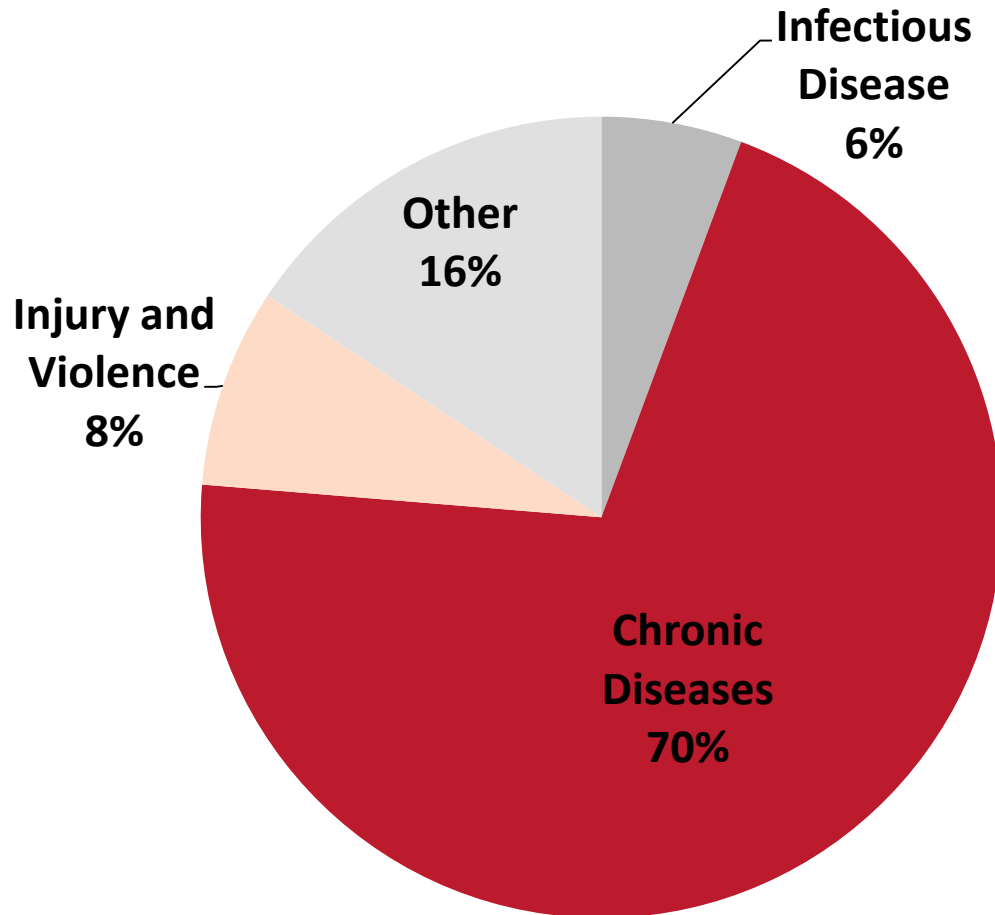
- **2,911,641** = Total Population
- **Race/ethnic composition**
 - 76.4% non-Hispanic Whites
 - 5.9% non-Hispanic African Americans
 - 11.6% Hispanics
 - 6.1% non-Hispanic Native Americans/Asians/Pacific Islanders/Multi Race groups
- **Age**
 - 36.1 years=Median age
 - 24.7%: Kansas population percent under age 18 years
 - 14.6%: Kansas population percent age 65 years and over
 - Increase in older age groups

Source:

- United States Census Bureau Quick Facts: Kansas (vintage 2015 <http://www.census.gov/quickfacts/table/PST045215/20> accessed on January 10, 2017)
- 2015 Kansas Annual Summary of Vital Statistics. Bureau of Epidemiology and Public Health Informatics, KDHE

LEADING CAUSES OF DEATH IN KANSAS

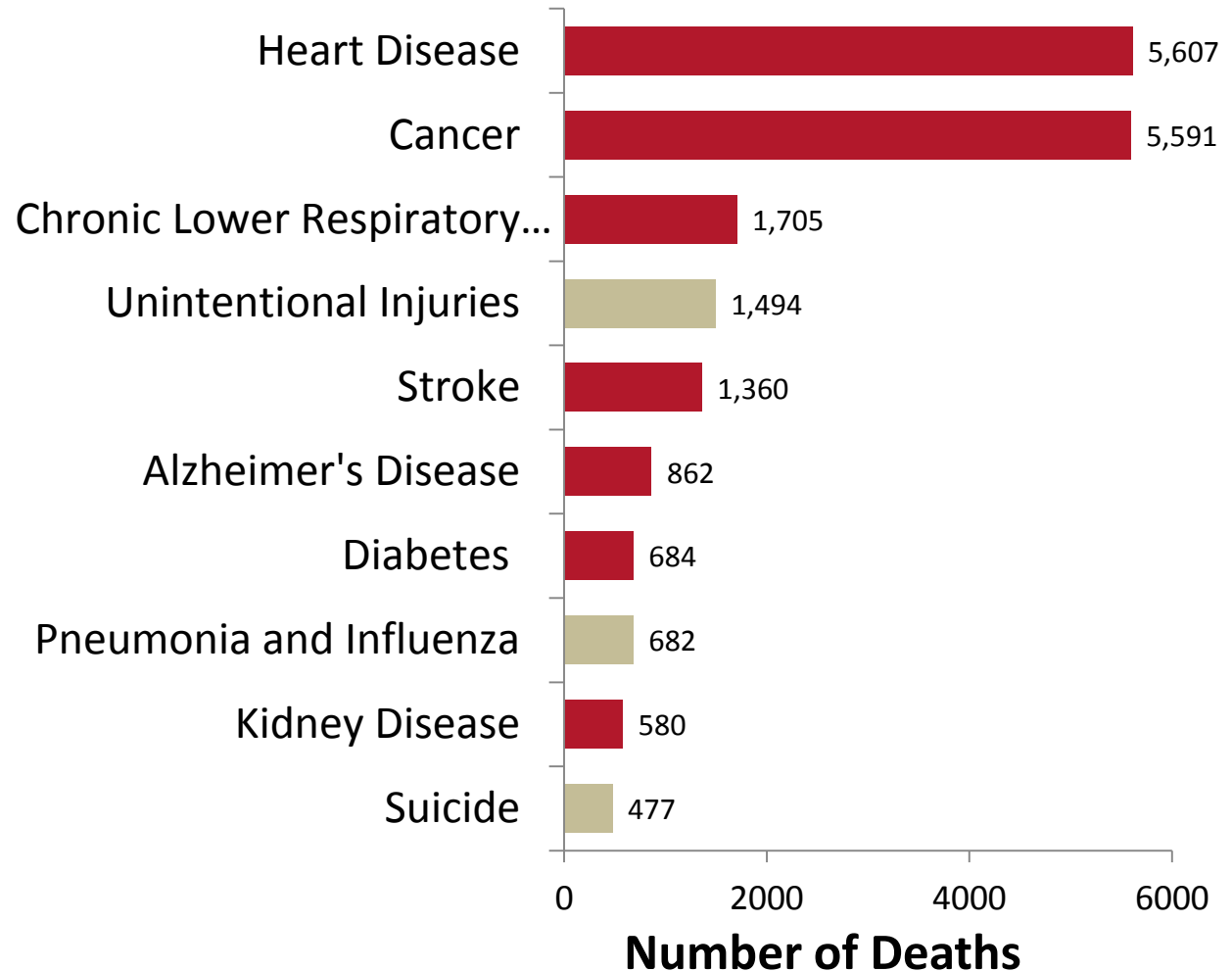
Chronic diseases are the leading causes of death in Kansas, 2015



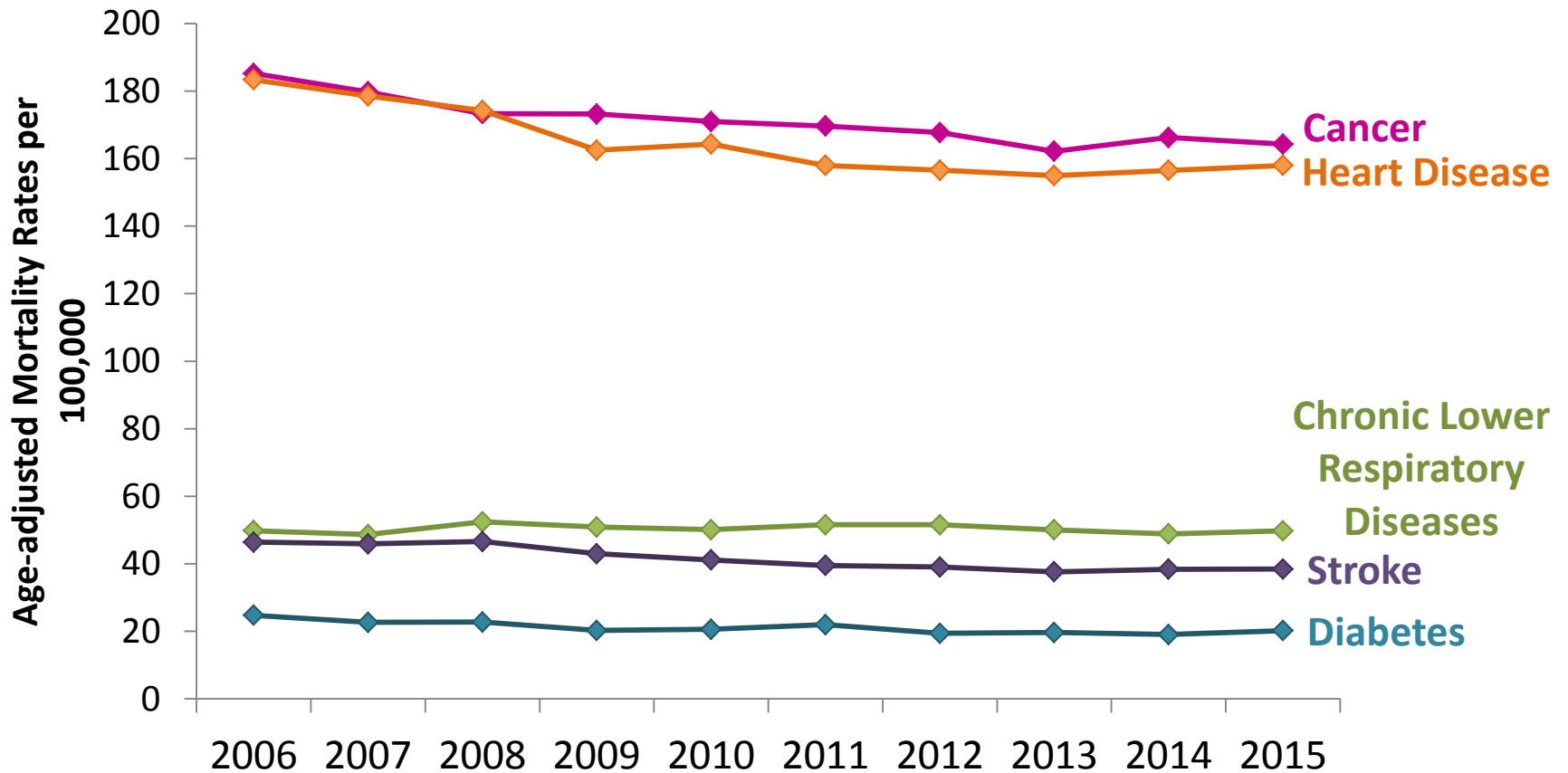
Chronic diseases are the leading causes of death in Kansas, 2015

In 2015 in Kansas

- 26,612 total deaths
- **7** of the top **10** causes of death were chronic diseases
- Heart disease and cancer accounted for **42%** of all deaths



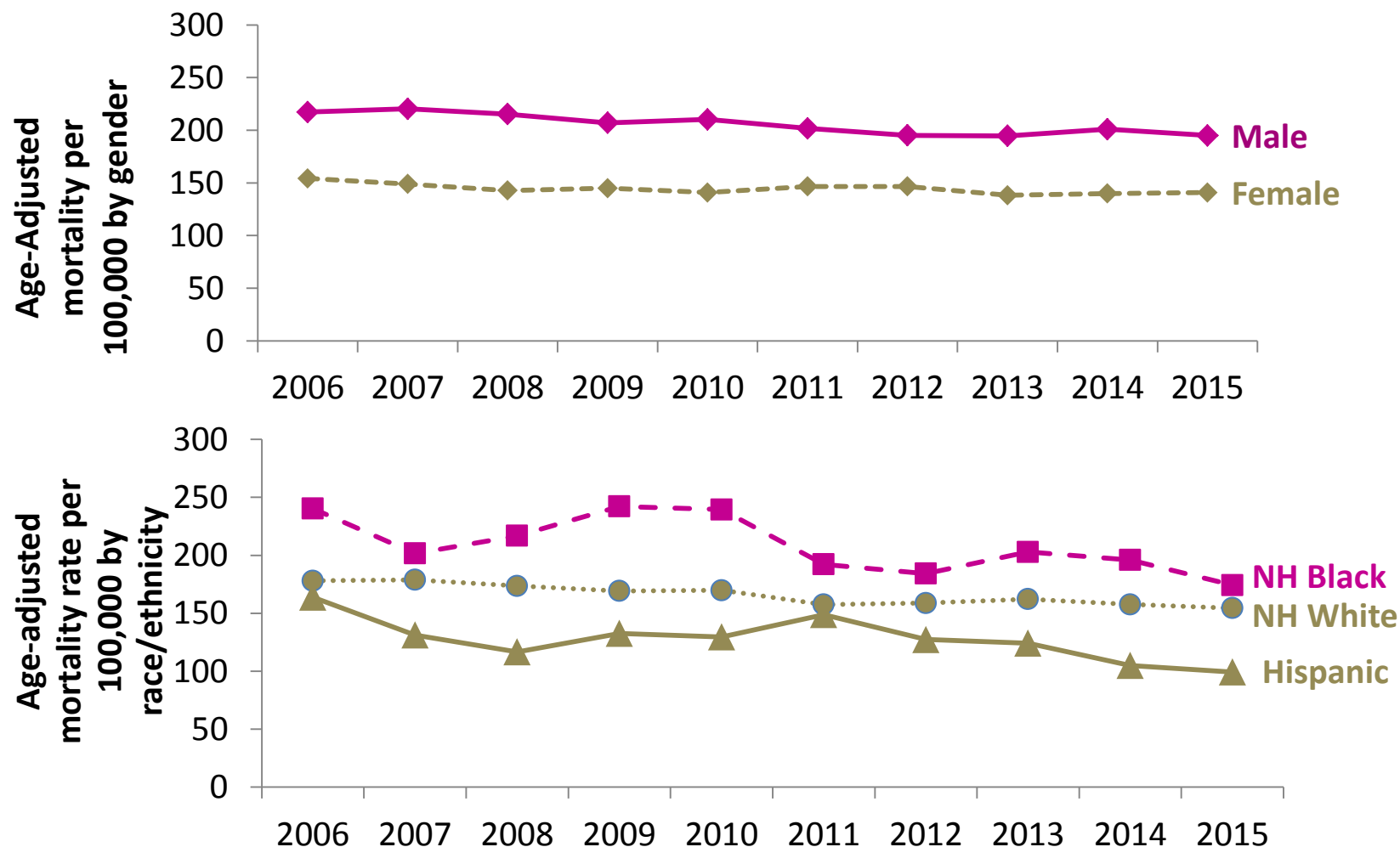
Trends in mortality rates for chronic diseases in Kansas, 2006-2015



Source: 2006-2015 Kansas Vital Statistics, Center for Health and Environmental Statistics, KDHE.

Note: Rates were age-adjusted to the U.S. 2000 standard population using direct method based on NCHS 11 age categories. Cancer was defined as ICD-10 codes C00-C97. Heart disease was defined as ICD-10 codes I00-I09, I11, I13, I20-I51. Chronic lower respiratory disease was defined as ICD-10 codes J40-J47. Stroke was defined as ICD-10 codes I60-I69.

Gender and race/ethnicity disparities in cancer mortality, Kansas 2006-2015

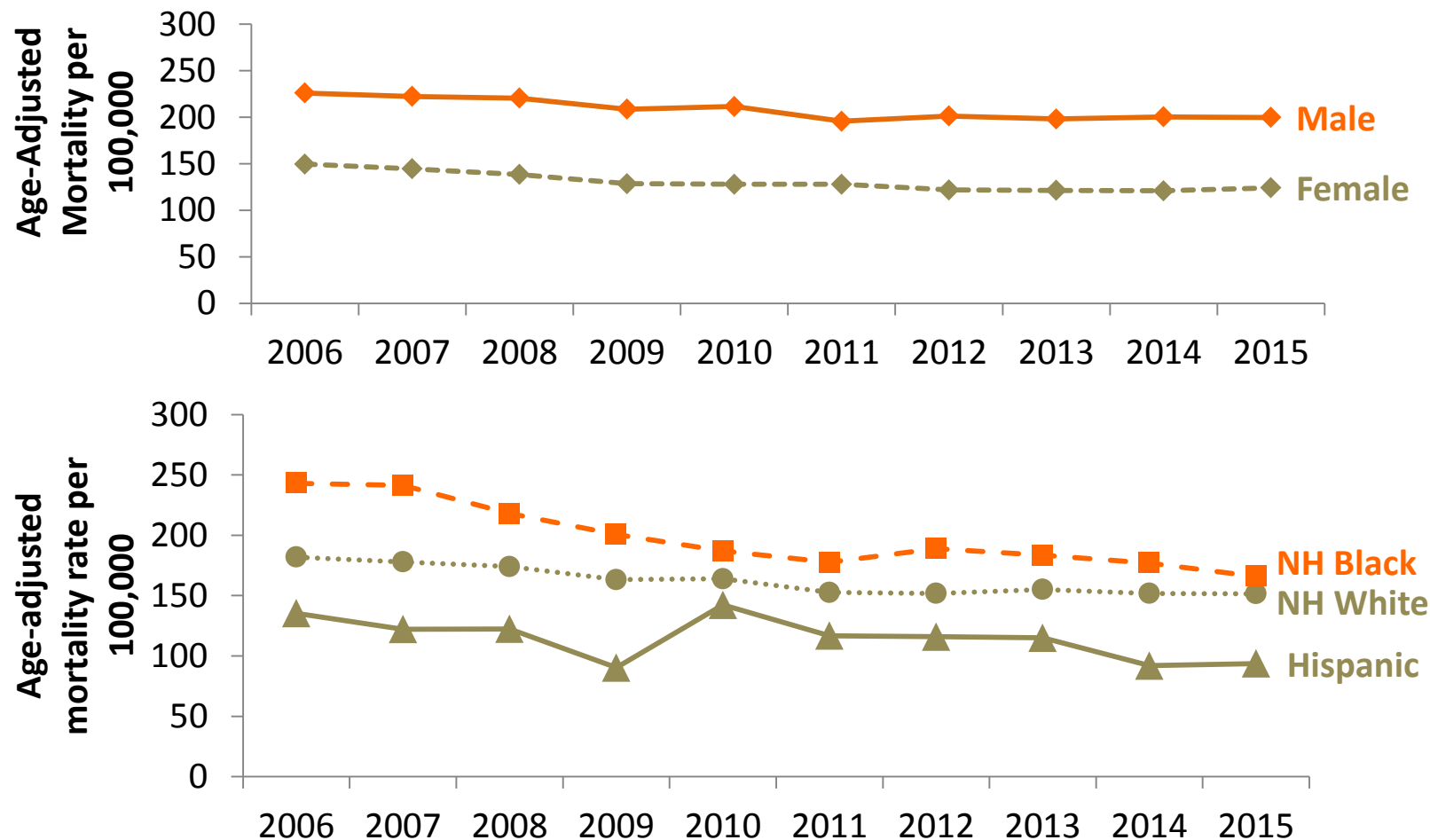


Source: 2006-2015 Kansas Vital Statistics, Center for Health and Environmental Statistics, KDHE.

Note: NH=Non-Hispanic; Rates were age-adjusted to the U.S. 2000 standard population using direct method based on NCHS 11 age categories.

Cancer was defined as ICD-10 codes C00-C97.

Gender and race/ethnicity disparities in heart disease mortality, Kansas 2006-2015

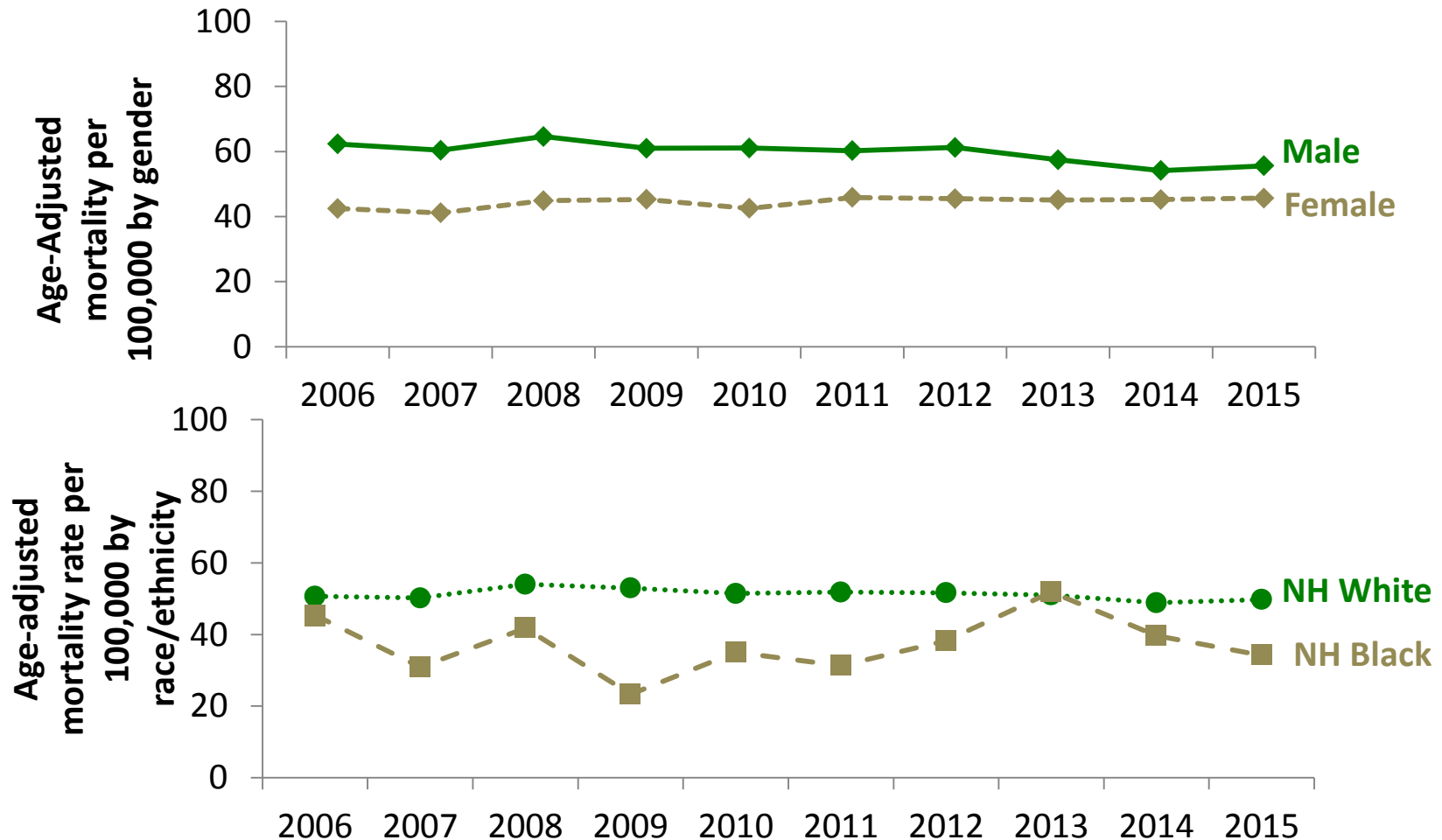


Source: 2006-2015 Kansas Vital Statistics, Center for Health and Environmental Statistics, KDHE.

Note: NH=Non-Hispanic. Rates were age-adjusted to the U.S. 2000 standard population using direct method based on NCHS 11 age categories.

Heart disease was defined as ICD-10 codes I00-I09, I11, I13, I20-I51.

Gender and race/ethnicity disparities in chronic lower respiratory disease mortality, Kansas 2006-2015

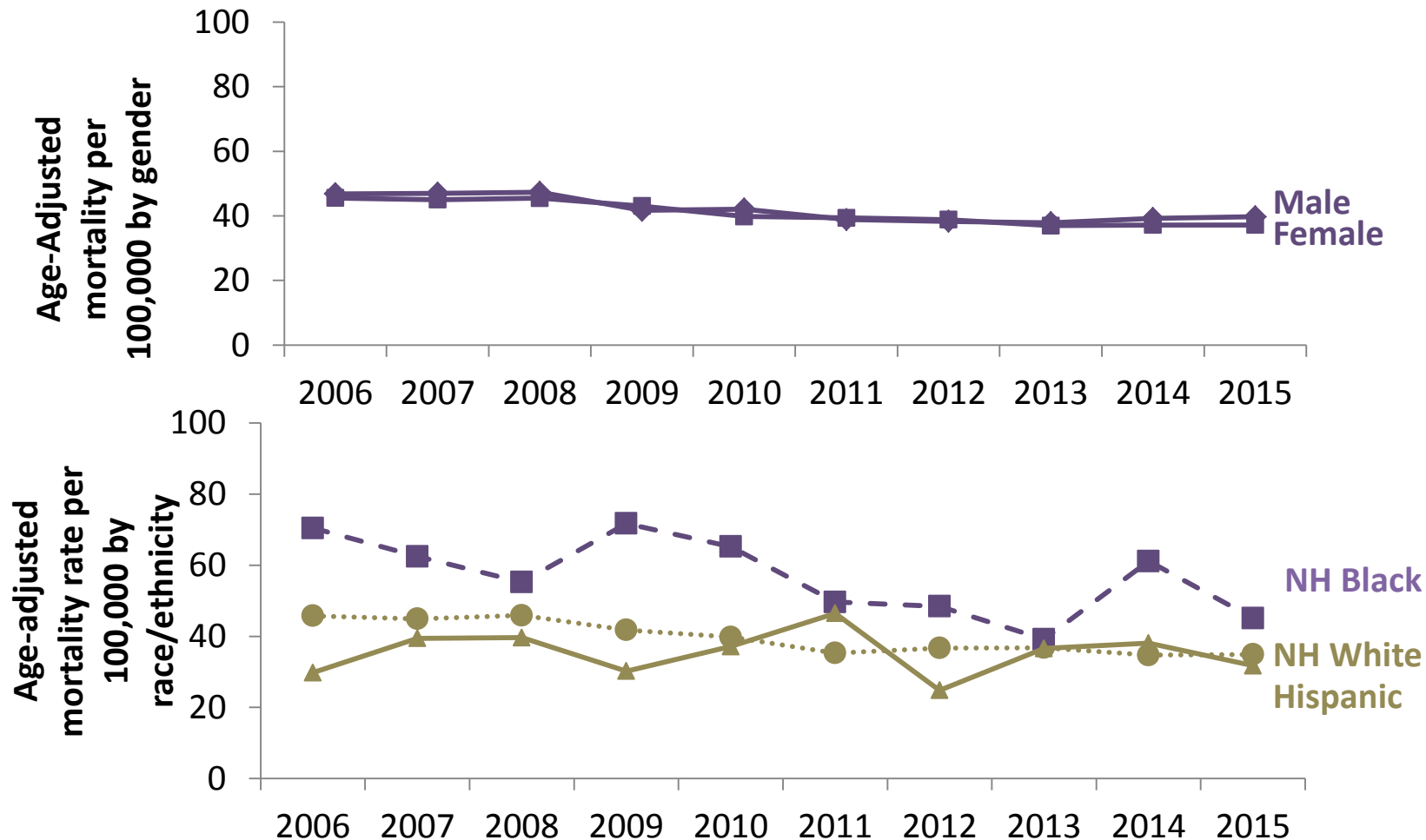


Source: 2006-2015 Kansas Vital Statistics, Center for Health and Environmental Statistics, KDHE.

Note: NH=Non-Hispanic. Rates were age-adjusted to the U.S. 2000 standard population using direct method based on NCHS 11 age categories.

Chronic lower respiratory disease was defined as ICD-10 codes J40-J47.

Gender and race/ethnicity disparities in **stroke** mortality, Kansas 2006-2015

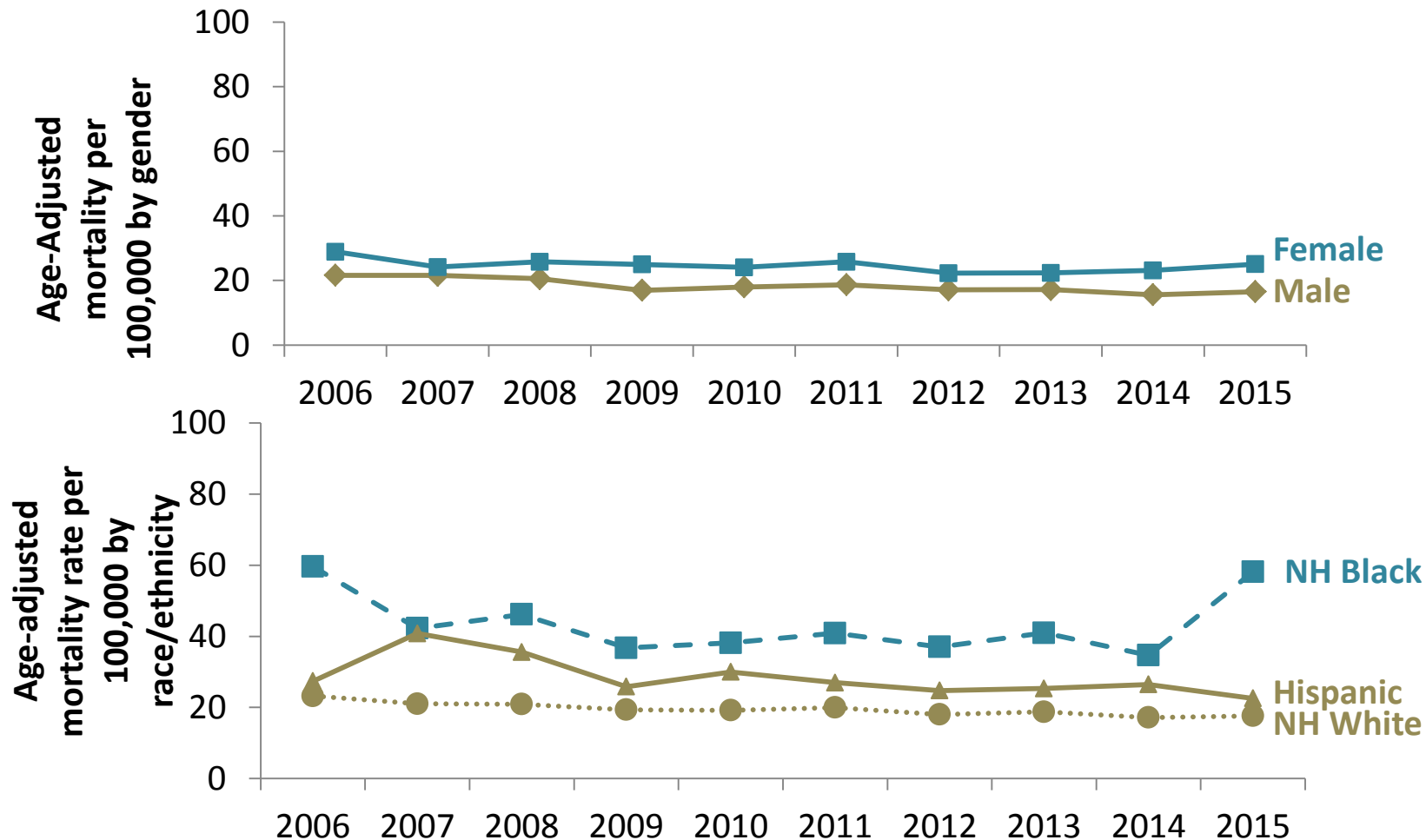


Source: 2006-2015 Kansas Vital Statistics, Center for Health and Environmental Statistics, KDHE.

Note: NH=Non-Hispanic. Rates were age-adjusted to the U.S. 2000 standard population using direct method based on NCHS 11 age categories.

Stroke was defined as ICD-10 codes I60-I69.

Gender and race/ethnicity disparities in **diabetes** mortality, Kansas 2006-2015



Source: 2006-2015 Kansas Vital Statistics, Center for Health and Environmental Statistics, KDHE.

Note: NH=Non-Hispanic. Rates were age-adjusted to the U.S. 2000 standard population using direct method based on NCHS 11 age categories.

Diabetes was defined as ICD-10 codes E10-E14.

Summary: gender and race/ethnicity disparities in age-adjusted mortality for selected chronic diseases, Kansas 2006-2015

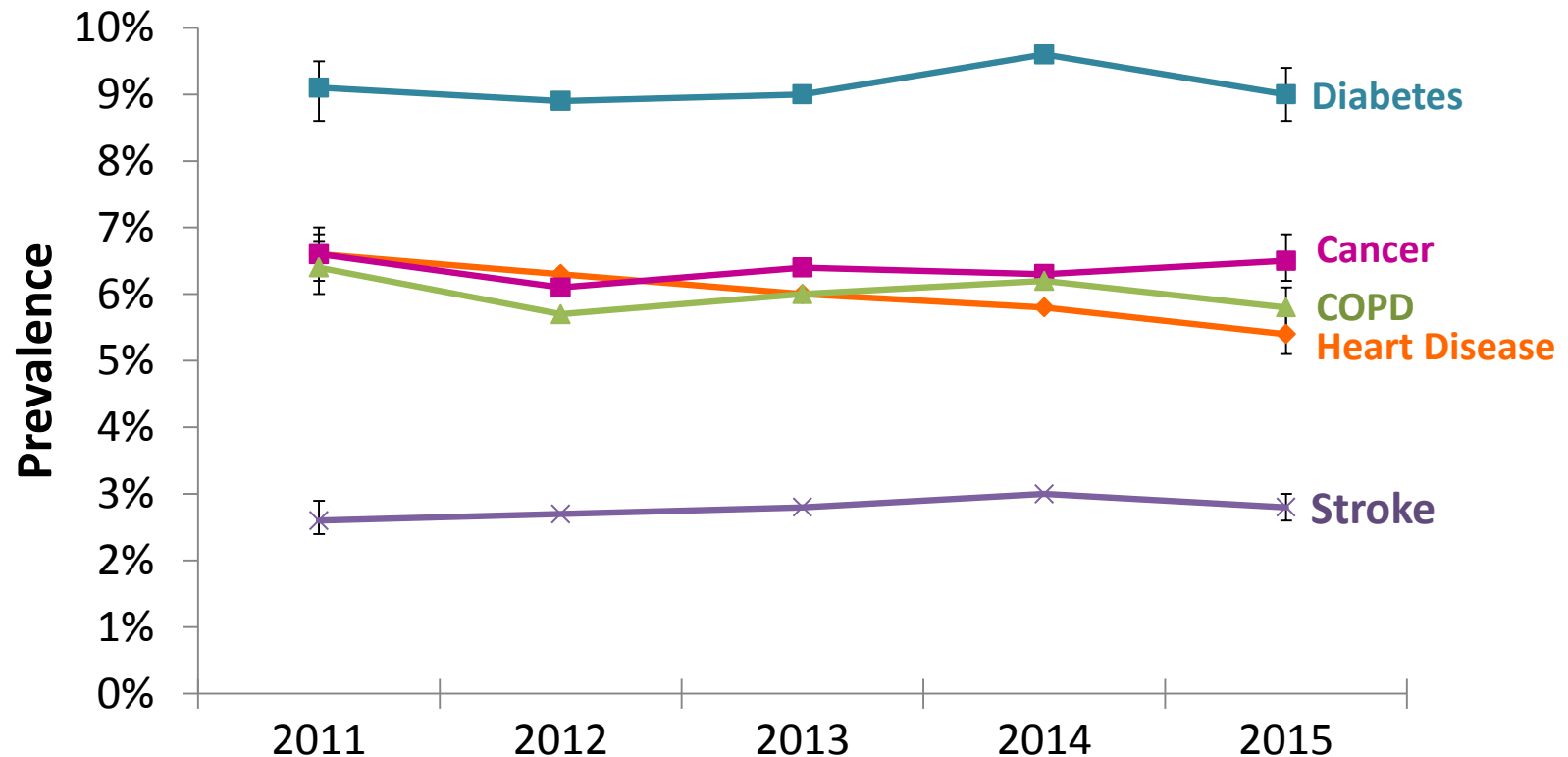
Cause of Death	Gender Disparities	Race/Ethnicity Disparities
Cancer	↑ Males	↑ NH African Americans
Heart Disease	↑ Males	↑ NH African Americans
Chronic Lower Respiratory Disease	↑ Males	↑ NH Whites
Stroke	--	↑ NH African Americans
Diabetes	↑ Females	↑ NH African Americans

Source: 2006-2015 Kansas Vital Statistics, Center for Health and Environmental Statistics, KDHE.

Note: NH=Non-Hispanic. Rates were age-adjusted to the U.S. 2000 standard population using direct method based on NCHS 11 age categories.

BURDEN OF CHRONIC DISEASE IN KANSAS

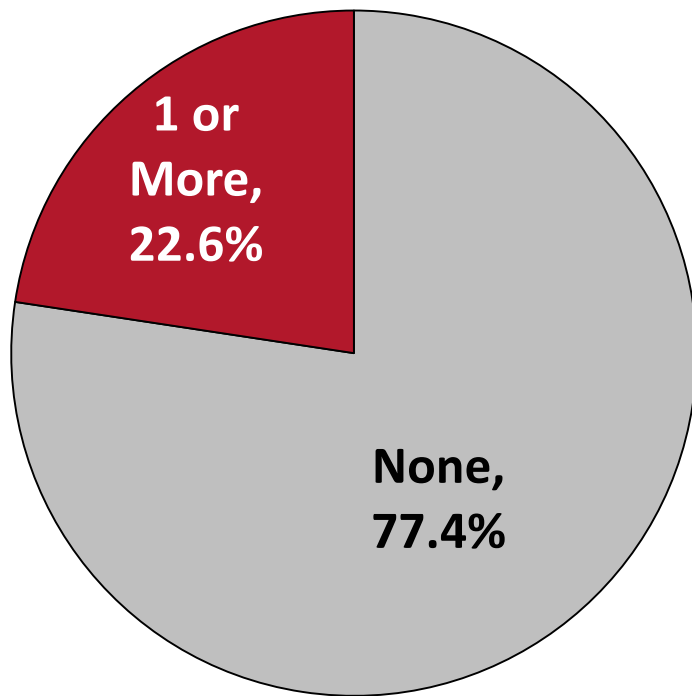
Prevalence of chronic disease among adults 18 years and older in Kansas, 2011-2015



Source: 2011-2015 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

Notes: Prevalence estimates were adjusted to the U.S. 2000 standard population using direct method based on five age groups. Prevalence of Heart Disease includes coronary heart disease (angina) and heart attack (myocardial infarct). Cancer is all cancers other than skin cancer. COPD=Chronic Obstructive Pulmonary Disease (COPD), emphysema or chronic bronchities.

Greater than 1 in 5 Kansas adults have been diagnosed with one or more leading chronic disease*, 2015



495,497

Kansas adults have been diagnosed with one or more leading chronic disease

Source: 2015 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

*Leading chronic disease includes heart disease, stroke, cancer, COPD, diabetes

Notes: Prevalence of Heart Disease includes coronary heart disease (angina) and heart attack (myocardial infarct). Cancer is all cancers other than skin cancer.

Disparities in the prevalence of chronic diseases, Kansas 2015

Condition	Gender	Race/Ethnicity (comparison NH Whites)*	Education	Annual household Income	Mental Health (MH) Status
Cancer	↑ Females	↑ NH Multi Race	--	↑ Lower	↑ Poor MH
Heart Disease	↑ Males	↑ NH Multi Race	↑ Lower	↑ Lower	↑ Poor MH
Stroke	--	↑ NH African American, NH Multi Race	↑ Lower	↑ Lower	↑ Poor MH
COPD	↑ Females	↑ NH Multi Race	↑ Lower	↑ Lower	↑ Poor MH
Diabetes	--	↑ NH African American, NH Multi Race, Hispanic	↑ Lower	↑ Lower	↑ Poor MH

Source: 2015 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

*Prevalence estimates for race/ethnicity were age-adjusted to the U.S. 2000 standard population using direct method based on five age groups. Non-Hispanic whites used as the reference for comparison.

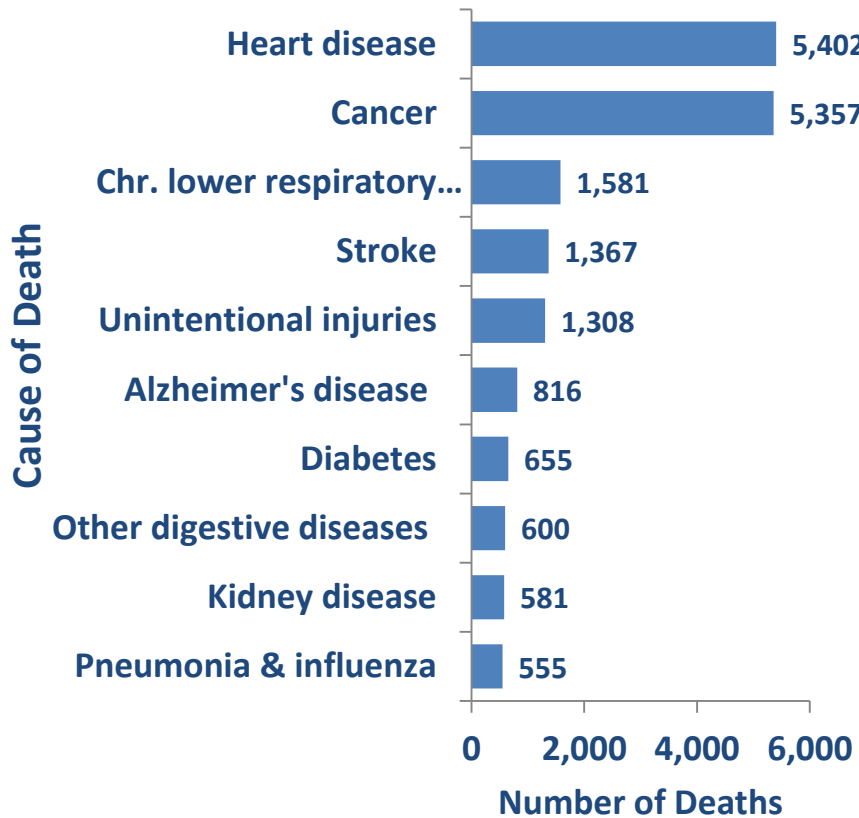
Notes: NH=non=Hispanic; MH=Mental Health; Categories: Gender (male/female); Race/Ethnicity (non-Hispanic white, non-Hispanic African American, Hispanic, non-Hispanic multi-race, non-Hispanic other), Education (<high school, =high school, some college, college graduate), Annual Household income (<\$15,000, \$24,999, \$25,000-\$34,999, \$35,000-\$49,000, \$50,000+); Mental Health Status (14+ days mental health not good, <14 days mental health not good during past month)

Health starts where we live, learn, work and play

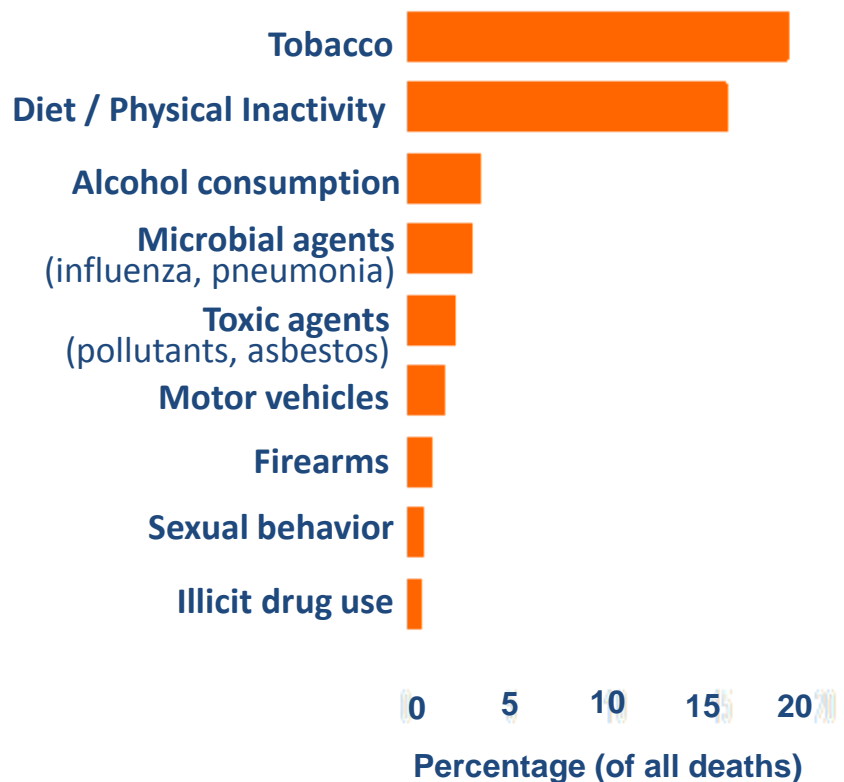
**ENDING WITH PREVENTION: REDUCING THE
PREVENTABLE BURDEN OF CHRONIC
DISEASE**

Leading versus Actual Cause of Death

Leading Causes of Death* - KS, 2010

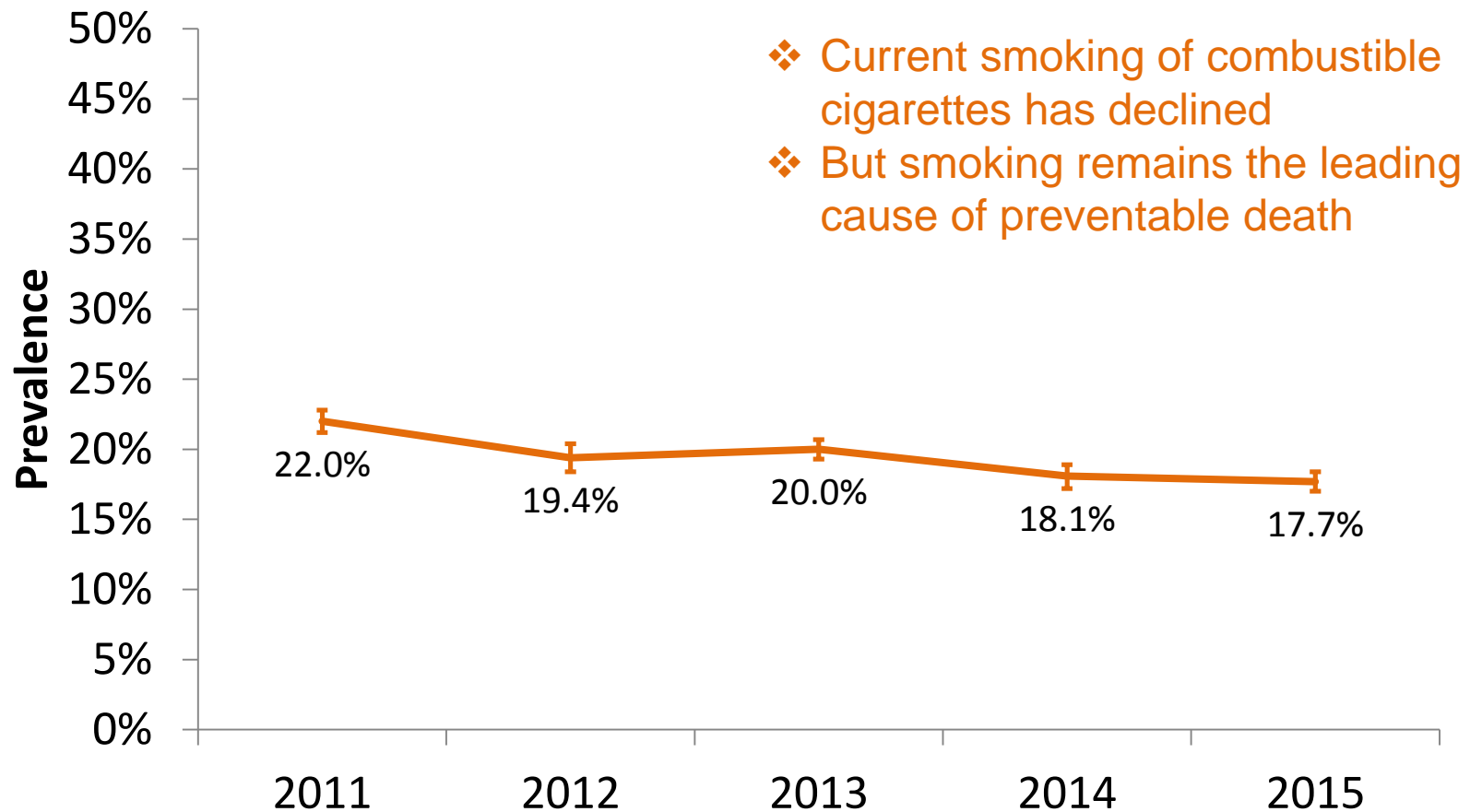


Actual Causes of Death† - KS, 2010

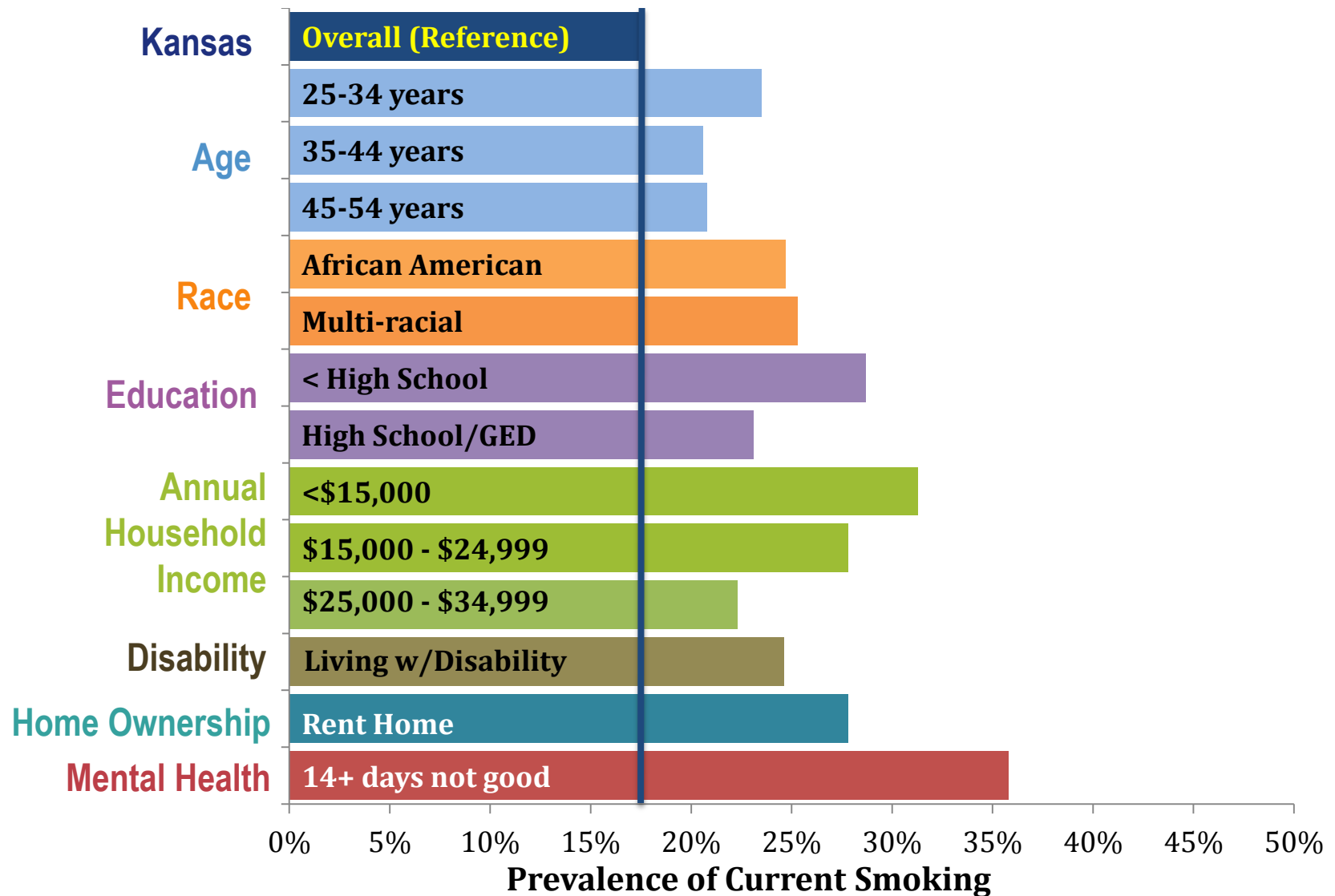


Source: 2013 Kansas Information for Communities, Bureau of Epidemiology and Public Health Informatics, KDHE; † Adapted from McGinnis Foege, updated by Mokdad A, et. al.

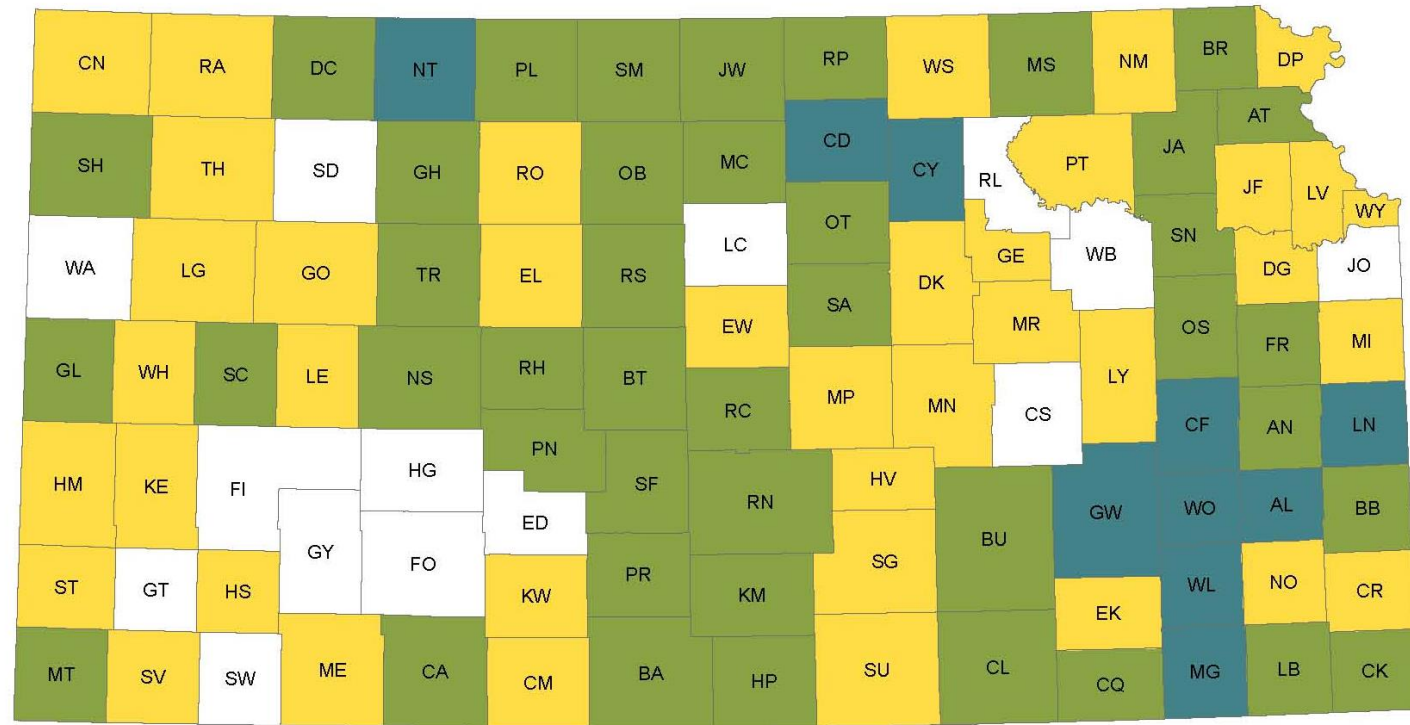
Prevalence of leading risk factors for death: **current smoking** among Kansas adults, 2011-2015



Disparities in current smoking among Kansas adults, 2015



Percent of maternal cigarette use during pregnancy by county of residence, Kansas 2015



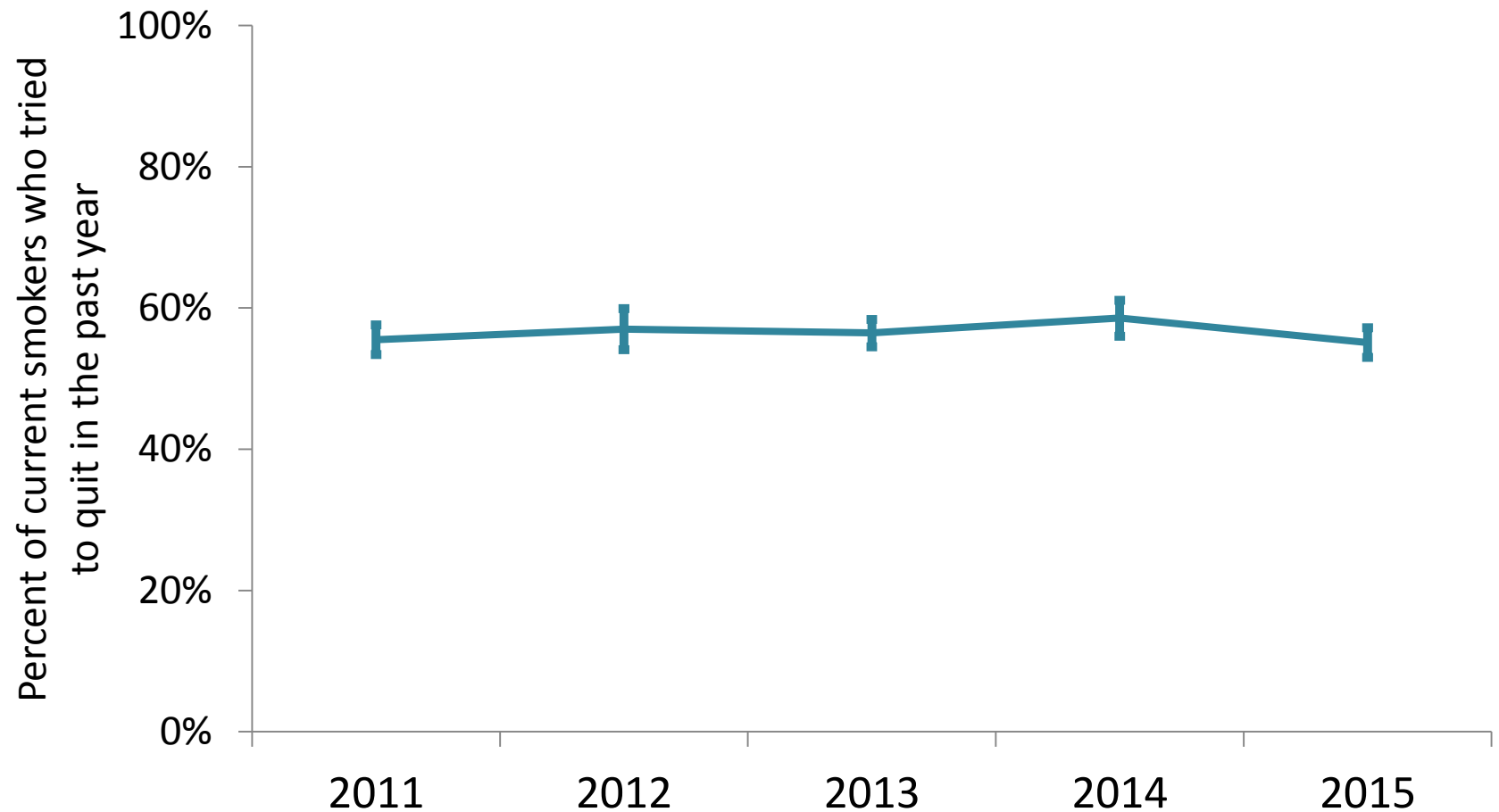
Percent of Mothers Indicating Use of Tobacco

Statewide Percent: 11.0

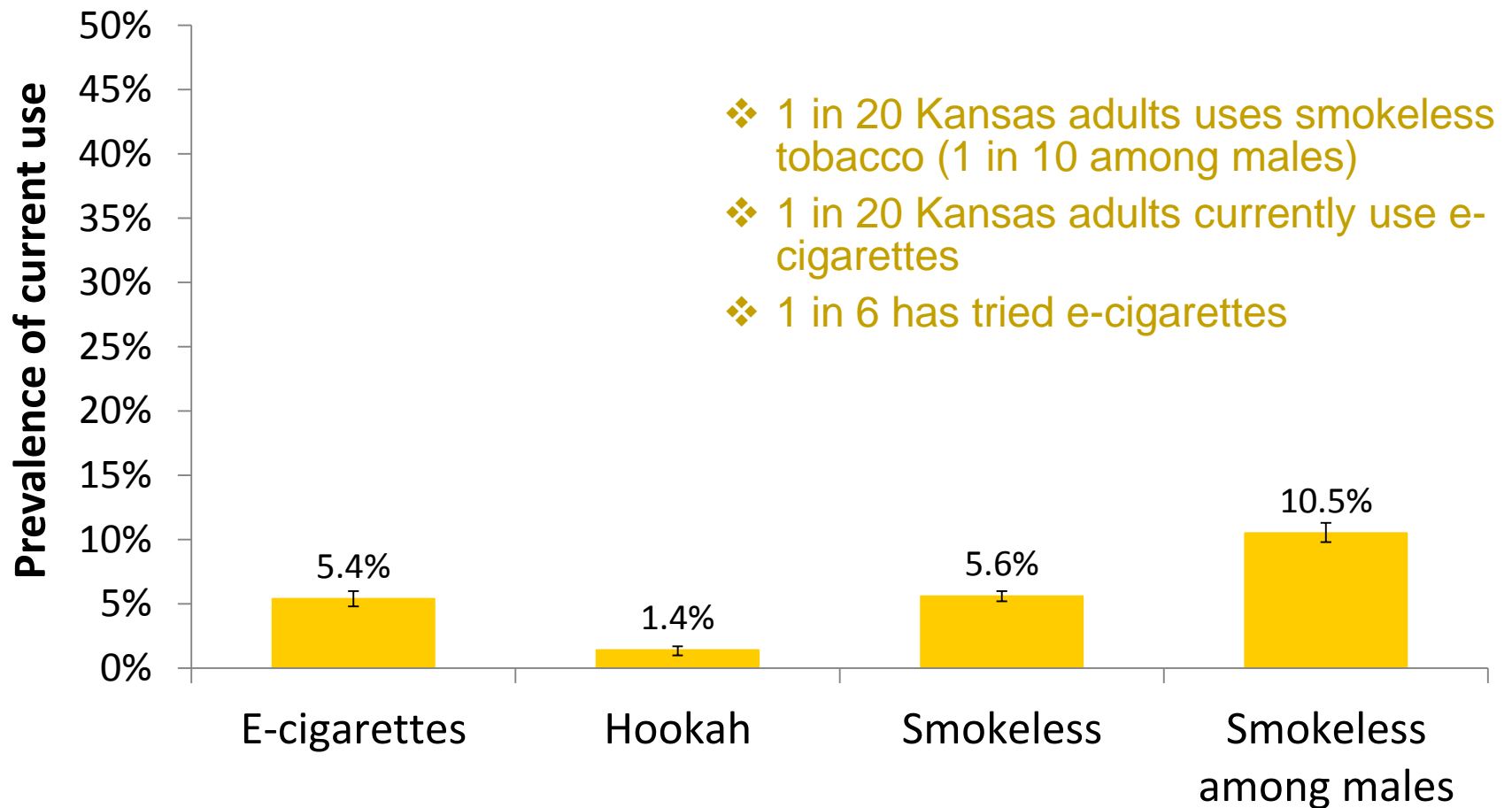
Legend



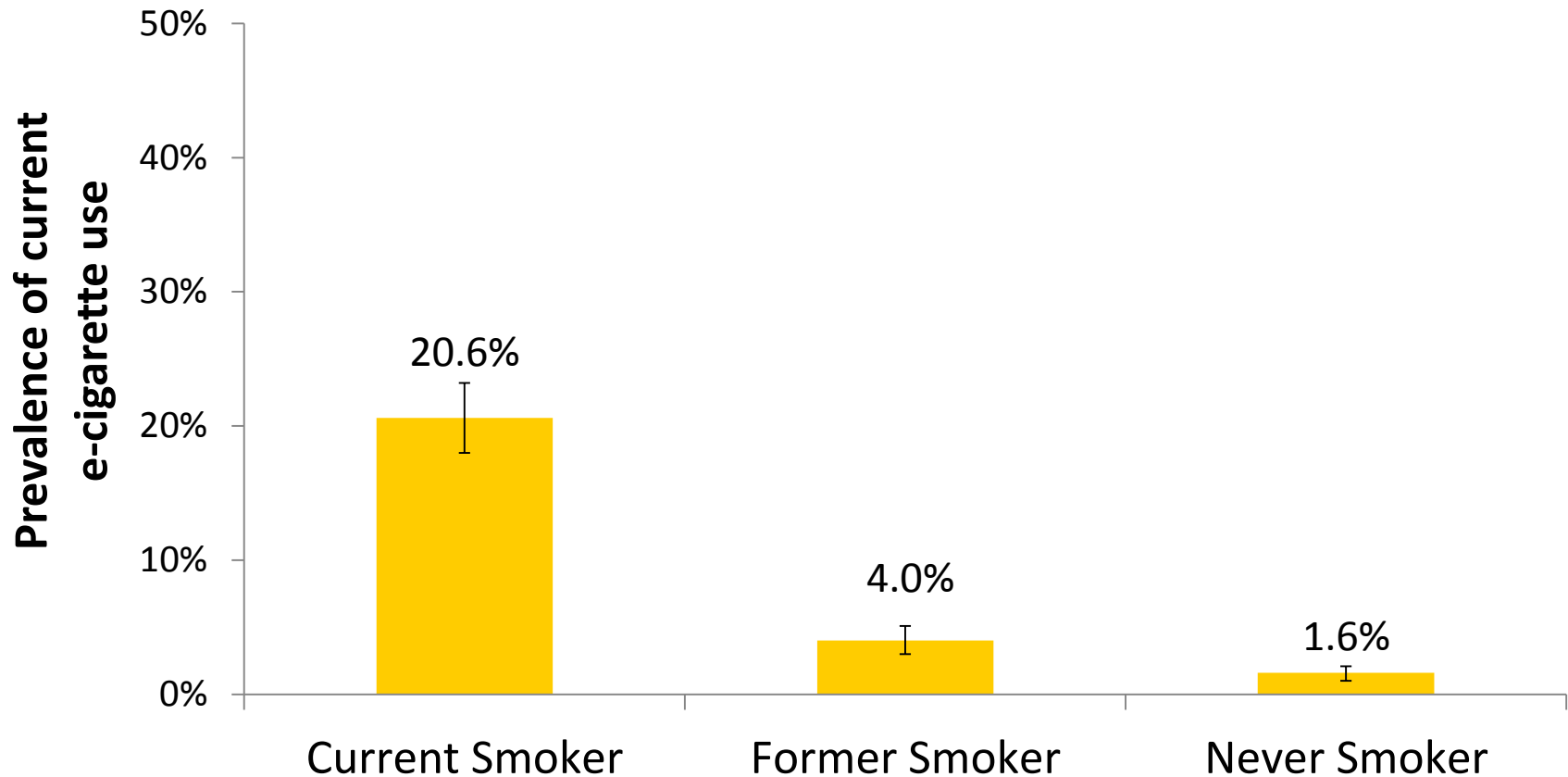
More than half of current adult smokers recently tried to **quit smoking**, Kansas 2011-2015



Prevalence of current use of **other tobacco products** among Kansas adults, 2015



Dual Use: Current use of e-cigarettes is highest among Kansas adults who smoke, 2015



Disparities of **current smoking** and other key indicators of tobacco use (compared to State overall*), Kansas 2015

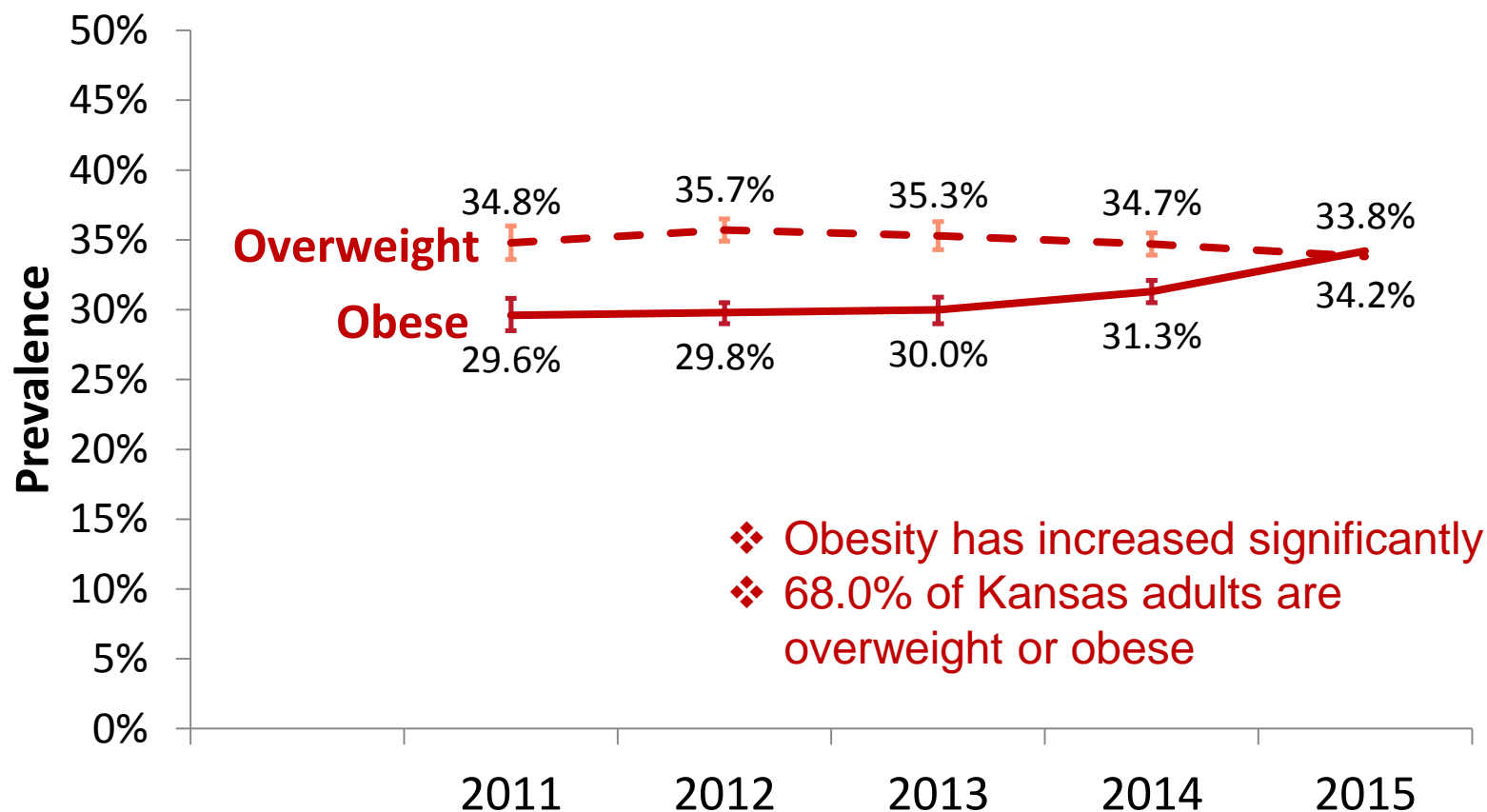
Disparity Characteristic	Current Smoking	Quit attempts among smokers	Current Smokeless Tobacco use	Current E-cigarette Use
Gender	--	--	↑ Males	--
Age	↑ 25-54 years	↑ <35 years	↑ 35-44 years	↑ <35 years
Race	↑ African American, multi-race	↑ Multi-race	--	--
Ethnicity	--	↑ Hispanic	--	--
Education	↑ ≤High School	--	↑ High-school	--
Annual household income	↑ <\$35,000	--	--	↑ 15,000-24,999
Disability status	↑ Living with	↑ Living with	--	--
Population Density	--	--	↑ Frontier, rural & densely rural	--
Home ownership	↑ Rent	--	--	↑ Rent
Mental health status	↑ Poor MH	--	--	↑ Poor MH

Source: 2015 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

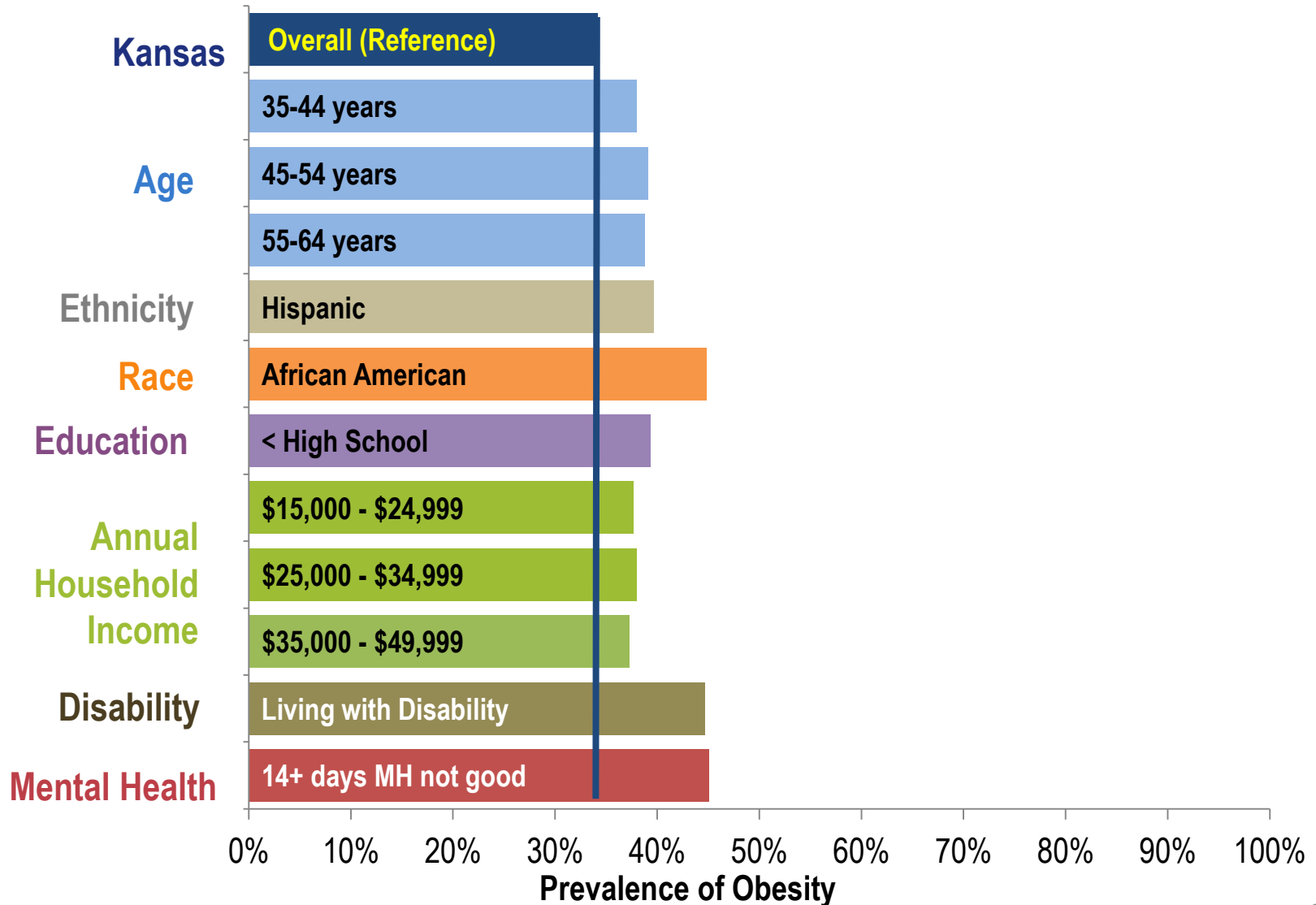
Note: -- = No Disparity, NH=non-Hispanic, Poor MH= 14+ days mental health not good

*Disparities identified as significantly higher prevalence compared to overall State estimate

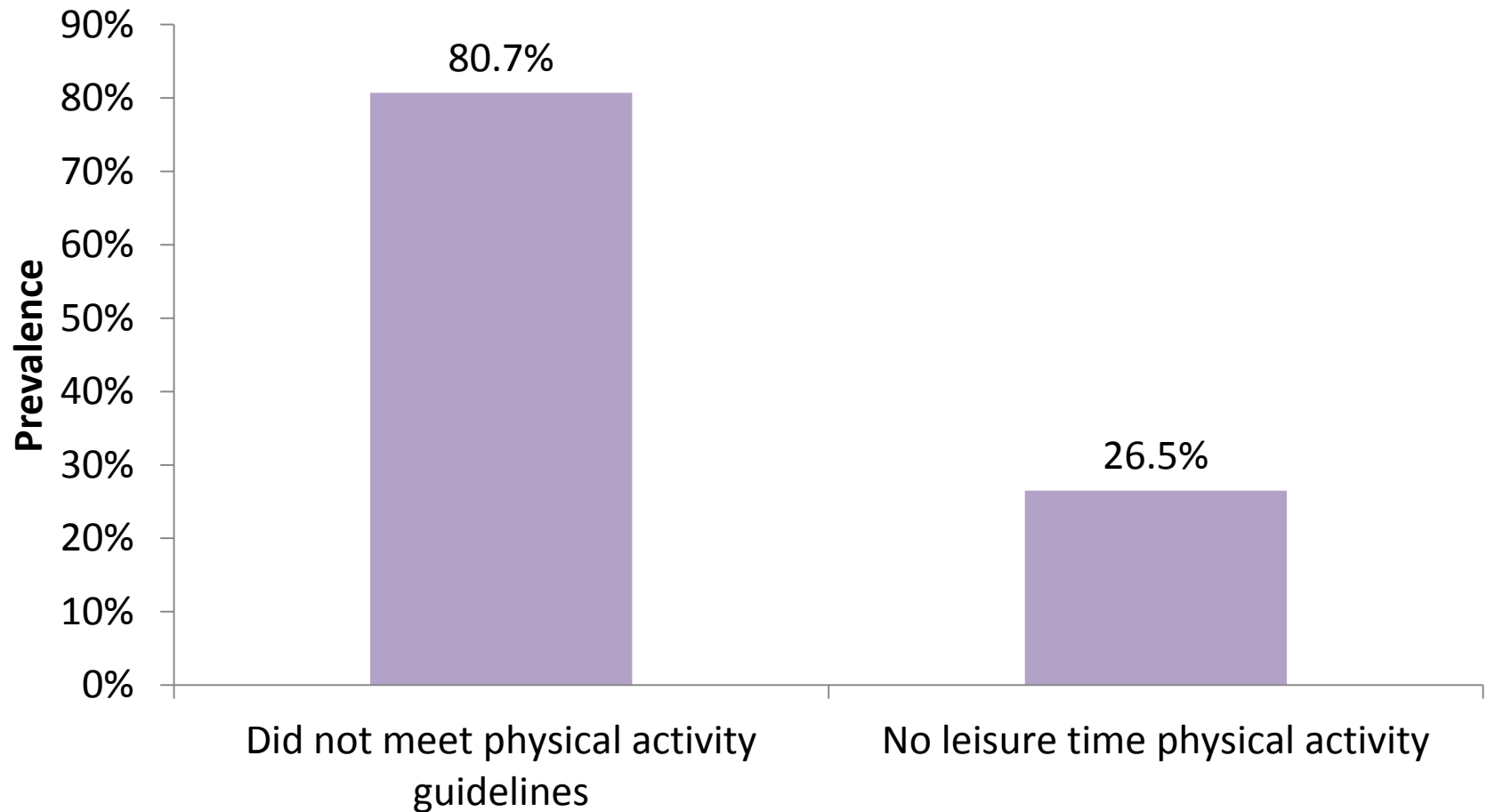
Prevalence of leading risk factors for death: **overweight** and **obesity**, Kansas 2011-2015



Disparities in Obesity, Kansas 2015



Prevalence of key risk factors for obesity: **physical activity**, Kansas 2015



Disparities: **obesity** & physical activity (compared to State overall*), Kansas 2015

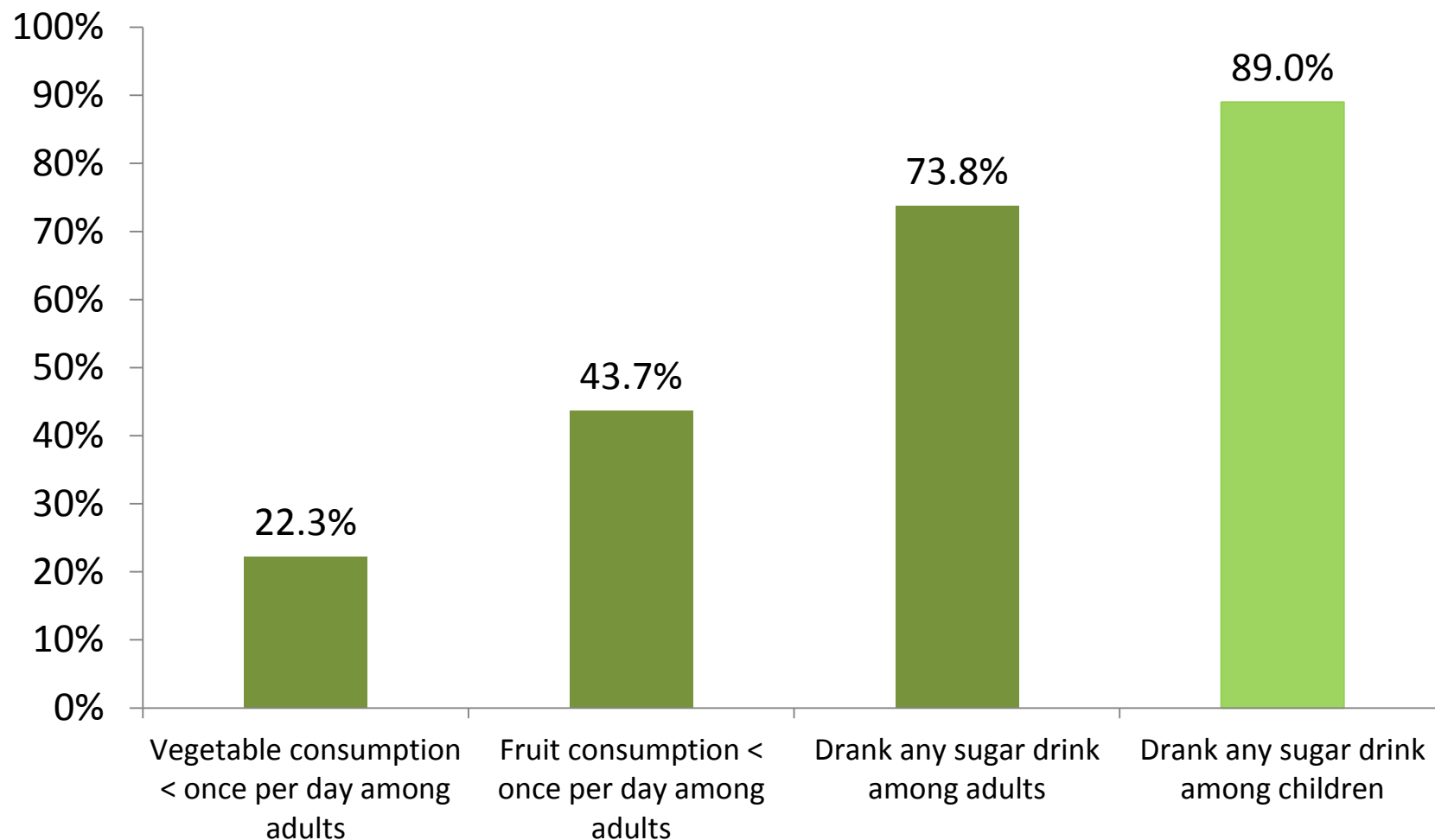
Disparity Characteristic	Obesity	Not Meeting Physical Activity Recommendations	No Leisure Physical Activity
Gender	--	↑ Female	--
Age	↑ 45-64 years	↑ 55+ years	↑ 55+ years
Race	↑ African American, multi-race	--	↑ African American
Ethnicity	↑ Hispanic	--	↑ Hispanic
Education	↑ < High School	↑ ≤ High School	↑ ≤ High School
Annual household income	↑ \$15,000-\$49,000	↑ <\$25,000	↑ <\$35,000
Disability status	↑ Living with	↑ Living with	↑ Living with
Population Density	--	↑ Frontier & rural	↑ Frontier & rural & densely settled rural
Mental health status	↑ Poor MH	↑ Poor MH	↑ Poor MH

Source: 2015 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

Note: -- = No Disparity , NH=non-Hispanic, Poor MH= 14+ days mental health not good

Prevalence of key risk factors for obesity:

nutrition, Kansas



Disparities in **obesity** & **nutrition** among Kansas adults (compared to State overall*)

Disparity Characteristic	Obesity	Vegetable Consumption <once /day	Fruit Consumption <once/day	2013 Sugar-sweetened Beverage
Gender	--	↑ Males	↑ Males	↑ Males
Age	↑ 45-64 years	↑ 18-24 years	↑ 18-24 years	↑ <45 years
Race	↑ African American, multi-race	↑ African American	--	↑ African-American, other, multi-race
Ethnicity	↑ Hispanic	--	--	↑ Hispanic
Education	↑ < High School	↑ ≤High School	↑ <High School	↑ <High School
Annual household income	↑ \$15,000-\$49,000	↑ <\$25,000	↑ <\$15,000	↑ <\$25,000
Disability status	↑ Living with	↑ Living with	↑ Living with	--
Population Density	--	--	--	--
Mental health status	↑ Poor MH	↑ Poor MH	↑ Poor MH	--

Source: Obesity, vegetable consumption, fruit consumption: 2015 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE
 Sugar-sweetened beverage: 2013 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

Note: -- = No Disparity , NH=non-Hispanic, Poor MH= 14+ days mental health not good

Use of **farmers markets** to purchase fruits and vegetables, Kansas 2015

- **82.0%** of Kansas adults did not buy fruits and vegetables from a farmers market in the past 12 months
- **No disparities** by gender, age, race, ethnicity, education, income, population density and disability and mental health status.
- Top 3 reasons for not purchasing fruits & vegetables from Farmers markets
 - There is not one in the area (21.5%)
 - Prefer grocery/health food store (21.1%)
 - Hours are not convenient (16.6%)

Conclusion

Kansas population is diverse – age, race/ethnicity, gender, income, education, rural/urban

7 out of 10 top causes of death in KS are chronic diseases with high mortality & prevalence rates – similar to national data

Highly prevalent underlying risk factors

Disparities seen in chronic disease & risk factors' mortality, incidence & prevalence rates

Health disparities seen in: age groups, males, non-Hispanic African Americans & other/multi races, Hispanics, those with lower education, lower household income, living with disability & poor mental health

Conclusion



- Complex burden of chronic diseases & their risk factors in KS
- Overall burden further complicated by disparities
- Population level strategies needed in addition to individual level strategies
- CDC's HI-5 List:
 - Improves health & well-being in as early as 5 years
 - Cost effectiveness or savings over the lifetime of the population or earlier
 - 14 Evidence-based, community-wide interventions – 3 of which align directly with reducing leading risk factors for chronic disease

Questions



Contact Information:

Belle Federman

Advanced Epidemiologist

Community Health Promotion Section

Bureau of Health Promotion

Kansas Department of Health & Environment

Belle.Federman@ks.gov

785-296-1152